APPLYING AND HANDLING HIGH BAKE WATERBORNE COATINGS

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ABSTRACT: This specification provides general information about waterborne paints for in-house application as an approved finish for Digital products. It defines the procedures, guidelines and safety precautions to be observed in the use of waterborne coatings.

APPLICABILITY: This specification is applicable to the use of waterborne coatings on pre-treated ferrous or non-ferrous metals. Such coatings are not to be used on plastics.

STATUS: APPROVED 24-Apr-1989; type $ VTX SMC for expiration date.

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MLO5-1/P55, DTN: 223-3058, FRSBEE::DEBLOIS

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1 PURPOSE AND SCOPE

This specification provides general information and an introduction to Digital Equipment Corporation's use of waterborne paints for in-house application as an approved finish for our products. This specification provides procedures, guidelines and safety precautions that need to be taken in the use of such waterborne paints.

The information in this specification is intended for application of high bake type waterborne paints to meet Digital's finishing criteria for both steel and aluminum components.

These high bake waterborne coatings are intended for application to pre-treated ferrous or non-ferrous metals,; they are not intended for use on plastic components.

SAFETY PRECAUTIONS

Observe all general industry accepted safety standards, per NFPA and OSHA rulings.

Follow paint manufacturers' recommended precautions when applying, handling, and storing waterborne coating materials.

2 APPROVED MATERIALS

High Bake waterborne "Ecolotex-W Series" from J.L. Armitage & Co., Newark, NJ.

High bake water reducible #977 Series from Komac Paint Co., Denver, CO.

DEC STD 092-6 Finish and Color Standard - Digital-Approved Paint Suppliers and Material Identification provides up-to-date information on Digital-approved vendors.

3 STORAGE OF WATERBORNE PAINTS

Waterborne coatings contain water as the major vehicle and must be stored in areas that are not exposed to freezing temperatures. Some waterborne materials could be subjected to a freeze and thaw cycle; however such an environment could affect color, gloss, and possibly other physical characteristics.

Shelf life for waterborne coatings is one year, maximum. Any material that is stored for a longer period of time should be tested by Digital for color and gloss acceptance, and if deemed necessary, physical testing, prior to use in production.

4 MIXING AND PREPARING WATERBORNE PAINTS FOR SPRAY APPLICATION

Mixing waterborne material, using agitation or by rolling contains can cause bubbles to form in the material. These bubbles are hard to eliminate. Fast agitation is a definite NO when preparing paint for application.

Anti-foaming agents that are sometimes used to control the bubbles must be compatible with manufacturers' recommendations.

Use a slow and steady agitation to mix these coatings.

These coatings shall be reducible with tap water.

5 EQUIPMENT

Spray equipment, such as fluid tips, filters, etc., used to apply waterborne coatings should be stainless steel when possible, because of wear and/or corrosion problems.

Humidity control equipment is desirable within the application areas of waterborne materials. The ideal humidity range in the spraying and flash off areas is between 40 to 60 % relative humidity.

Conventional spray type air systems are the most popular methods for applying waterborne coatings. Electrostatic, airless disk, and bell type systems are being used with good results by our vendors.

6 SURFACE PREPARATION

Cold rolled steel and aluminum parts should be pre-treated and must meet the requirements for such, as specified in Finish Specifications 092-C25X-XXX, 092-C20X-XXX, and 092-C28X-XXX.

Waterborne paints are not as forgiving as solvent type coatings. The surfaces that are to be coated must be completely clean. If surfaces are not clean, the painted parts could be unacceptable in the areas of both adhesion and metal protection.

Surfaces should be cleaned just before painting. If parts are stored after cleaning, flash rusting could occur when coated.

Pre-treatment and primers may be required on some substrates before color coat is applied. Consult with the approved paint supplier on correct primers.

7 FILM THICKNESS

Waterborne coatings can be controlled in the same way as solvent base coatings. Note that better film integrity is achieved with multiple passes.

To obtain a cured 1-mil thickness of waterborne coating, a 2.5-mil thickness of wet coating is required. This is the normal rule, but cured thickness varies with each waterborne used.

8 OPERATING AND APPLICATION PROCEDURES

The actual application guidelines for waterborne coatings shall be supplied by the approved paint manufacturer of the material being considered.

9 PROCESS CONTROL

Finished parts must meet the requirements for physical, environmental, and appearance quality established in DEC STD 092 for baked paints on metal substrates.

10 WATERBORNE CLEAN-UP

Waterborne coatings are difficult to clean-up once they have dried. Clean-up painting equipment as soon as possible before the paint has dried.

Whenever possible, use plastic inserts in pots or tanks where paint is stored and/or used.

Never flush water fluid lines with solvents. Use water or a 10% solution of water and ammonia. When changing equipment over to apply solvent-based paints, fluid lines must be flushed with water first, and then solvents.

Do not leave spray guns with spray residue build-up. Always wash the cap and face with water and or water/ammonia before storing.

11 COLOR, TEXTURE, AND GLOSS VISUAL APPEARANCE

The color, gloss, and texture pattern for waterborne painted parts shall visually match the Digital color chip standard for acceptable visual controls.

Actual gloss can be controlled on smooth painted surfaces only, in accordance with ASTM D-523-78 60-degree geometry glossmeter.

12 COLOR AND TEXTURE CHIP STANDARDS/MATERIALS CONTROL

Color and texture standard chip plus production batch approval information can be supplied by Digital's Materials Research Lab, located in the Maynard Mill, MLO5-1/P55.

Periodic testing to DEC STD 092 should be determined and conducted by the Materials Research Lab for auditing purposes of this coating to verify original approved formulation.

APPENDIX A

REFERENCED DOCUMENTS

A.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00092-01	*DEC STD 092-1 Finish and Color Standard - Finish Standard for Applications*
EL-00092-02	*DEC STD 092-1 Finish and Color Standard - Finish Material Standard for Suppliers*
EL-00092-03	*DEC STD 092-1 Finish and Color Standard - Finish Material Test Requirements*
EL-00092-04	*DEC STD 092-1 Finish and Color Standard - Finish Standard for Applications*
EL-00092-06	*DEC STD 092-1 Finish and Color Standard - Digital-Approved Paint Suppliers and Material Identification*
76-65303-00	*Touch-Up Procedure for Air Dry and Aerosol Paints*

Copies of Digital EL-Class documents may be obtained from Standards and Methods Control, NRO4/D4, DTN: 287-3724, JOKUR::SMC, or via VTX SMC.

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A.2 Other Documents

Document Number	Document Title
	NFPA Codes and Standards, Chapter 33
29 CFR 1910	*OSHA Safety and Health Standard*

APPENDIX B

RELATED DOCUMENTS

B.1 Other Documents

Document Number	Document Title
	Federal Register Volume 36, #105, Part 2 EPA Requirements

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